

IX - ABSTRACT

5 Beta-amyloid peptide (β A) is a major fibrillar component of neuritic plaques in
Alzheimer's disease brains and is related to the pathogenesis of the disease. β A generation
depends on proteolytic cleavage of the amyloid precursor protein (APP).

10 The present invention is a new procedure for the cloning of human β A precursor
protein gene (human APP gene) based on the reverse transcription (RT) and the polymerase
chain reaction (PCR). This procedure for cloning human APP gene by means of RT-PCR
reactions is cost-effective, not time-consuming, and is suited for any laboratory.

15 The present invention also includes a new procedure for the construction of
expression plasmids, a/ using the pFastBacTM HTb and the pBlueBacHis2 A transfer vectors
for the purpose of obtaining human APP in insect cells; and b/ using the pET-28a (+) transfer
vector for the purpose of obtaining human APP in bacteria.

20 The present invention makes it easier to obtain full-length APP which is essential for
the identification of biological activities that occur in the APP molecule and for the
identification of proteases capable of creating β A. Knowing which protease creates β A is
important for the exploration of therapeutic and preventative strategies for the treatment of
Alzheimer's disease.

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